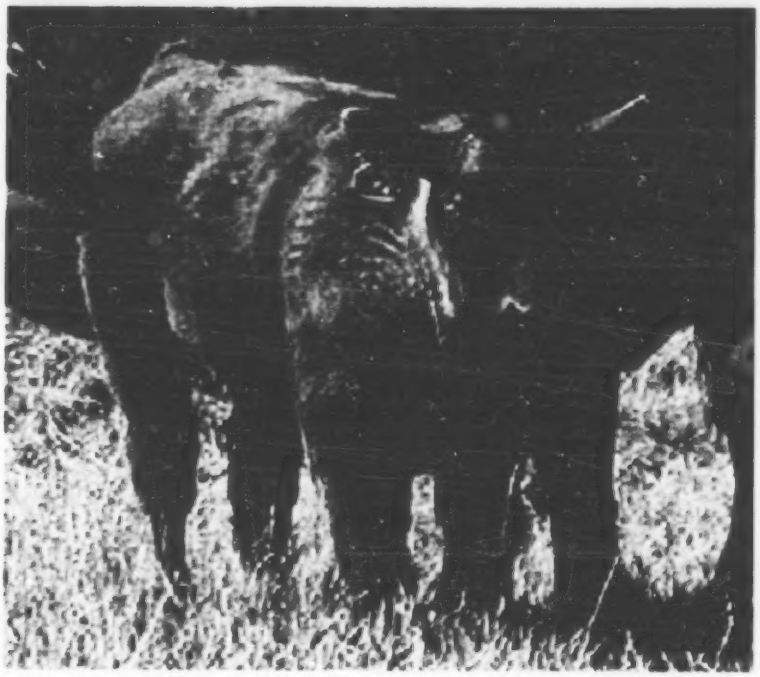
Saskatchewan
Agriculture
and Food

ECONOMIC FEASIBILITY OF RETAINED OWNERSHIP FOR COW-CALF PRODUCERS



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Foreword

The objective of this publication is to assist in assessing the economic opportunity for increasing livestock production in the province. One of the means to achieving this is through the retained ownership of calves by Saskatchewan cow/calf producers. This publication is intended to be used by producers who are interested in obtaining more information about the economics beef of production in the province and the possible advantages of retaining ownership of calves past the weaning stage of production. Readers are cautioned that many assumptions were made regarding costs of production in the preparation of this document, although considered accurate at the time of publication, they may prove inaccurate, as more current information becomes available. The prices used are compiled from a variety of sources at the time of publication and are not meant to predict the future.

Producers are cautioned that to properly evaluate the options proposed in this document, they should use their own information to more accurately reflect their individual operations.

This publication was written by Garth Lipinski of Saskatchewan Agriculture and Food. The assistance of those who assisted in the preparation and review of this publication is greatly appreciated

This publication and other Saskatchewan Agriculture and Food publications are on the Saskatchewan Agriculture and Food website at: **www.agr.gov.sk.ca**

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Economic Feasibility of Retained Ownership for Cow-Calf Producers

The following was adapted from a report prepared by the University of Saskatchewan for the Beef Development Fund. An Economic Analysis of Retained Ownership Strategies, 1999.

Introduction

Cow-calf producers bear considerable risk due to both production and financial factors. While production risk can be addressed through management initiatives such as breeding and feeding programs, financial risk is somewhat more difficult. Because cow-calf producers are located at the bottom of the beef supply chain their ability to mitigate financial risk is reduced. Retained ownership is one way cow-calf producers can gain more control and enable themselves to address some of the financial risks they face.

Defining Retained Ownership

Retained ownership occurs when cow-calf producers hold title to their calves beyond the customary period. Traditionally producers raise calves from birth to weaning before selling them to a feedlot or backgrounding operation. Under a retained ownership program the cow-calf producer would retain title of the calves after weaning as they move into backgrounding and/or feedlot programs. Using this arrangement the cow-calf producer can retain ownership of their calves from birth until they are sold to the packer after reaching "finishing" weight. Ownership can be retained by producers choosing to background and/or finish their calves themselves on farm or through contractual "custom feeding" arrangements where the calves would be backgrounded and finished in custom feedlots. Custom feeding allows the cow-calf producer to retain ownership of the calves without having to invest in additional facilities, equipment, feed or labour to finish the animals.

Advantages of a Retained Ownership Program

- Savings in transaction costs are one of the main economic advantages a cow-calf producer gains through retained ownership. Transaction expenses include items such as advertising expenses, negotiation cost to arrive at a fair price, market research to find suitable buyers or auction markets, commissions, insurance, etc. The transaction expenses that can be saved by retained ownership can be considerable. In 1999 the rates saved from retaining ownership through the backgrounding stage were $26.50/head (see Table 1.1).

  If ownership is retained through the backgrounding and finishing stages an additional $6.00/head can be saved on buying commissions of the finisher resulting in a total transaction cost saving of $32.50/head ($26.50 + $6.00).

Table 1.1 Transaction cost savings cow-calf to backgrounding

	$/Head
Sales Commission	$15.75
Buying Commission	$ 6.00
Check-off	$ 2.00
Insurance (Hartford)	$ 1.00
Brand Fee	$ 1.50
Horns	$ 0.25
Total Saving	**$26.50**

Increased marketing flexibility is another advantage of retained ownership. By retaining ownership a cow-calf producer may be able to avoid some of the seasonality involved in cattle prices by not having to sell their calves when the market is flooded with weaned calves in the fall. If prices are not attractive at this time, calves can be held and custom fed until more attractive prices are available.

- Spreading out risk is another advantage. By increasing the number of market segments (cow-calf, backgrounding, finishing) the producer is involved they will not be relying on the returns from one particular segment to generate profit. For example, less profitable returns at the cow-calf level maybe offset by higher returns at the backgrounding or finishing levels.

- Retained ownership also allows cow-calf producers to gain more of the benefits from their higher quality animals. Most of the benefits from top quality animals are claimed farther down in the production process through higher feed conversion rates and carcass quality. By retaining ownership cow-calf producers can obtain more of the benefits of their superior management and breeding programs to generate higher returns.

In addition to the direct economic advantages listed above there are also several production advantages that can be gained through retained ownership. Some of these include:

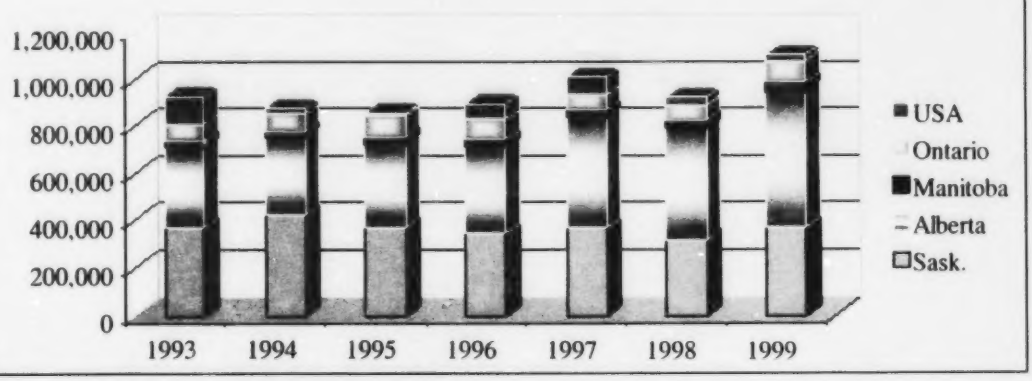
- Less stress and exposure to disease for the animals by not having to be sold through an auction market system allows weaned calves to move into backgrounding operations or feedlots with a higher health status.

- Retaining ownership also allows cow-calf producers to better evaluate their calves and breeding program to tailor future trait selection processes to improve upon identified areas.

- Custom feeding also allows cow-calf producers to take advantage of the production expertise of backgrounding and feedlot operators to improve feeding efficiency and gain economies of scale through the custom operators ability to spread fixed costs (such as facilities and equipment) over larger numbers of animals.

Finally, retained ownership will increase the number of cattle fed within the province to help develop the local feeding and packing industries, which will in turn enhance regional economies. Currently Saskatchewan exports the majority of the feeder and slaughter animals produced in the province (see figure 1.1, 1.2, 2.1, and 2.2).

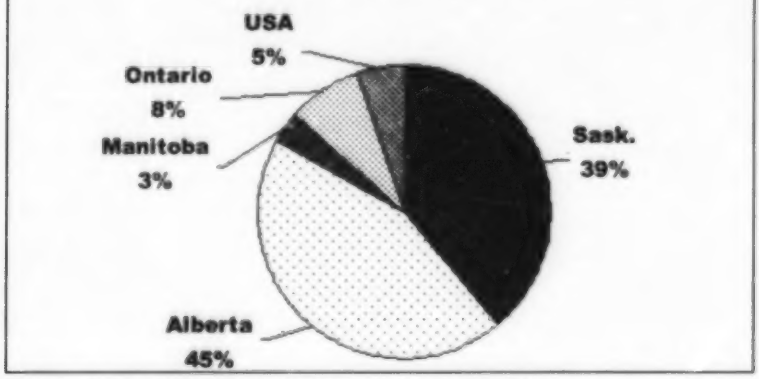
Figure 1.1 Destination of Sask. Feeder Calves Marketed 1993-1999



Source: Statistics Branch, Saskatchewan Ag. And Food

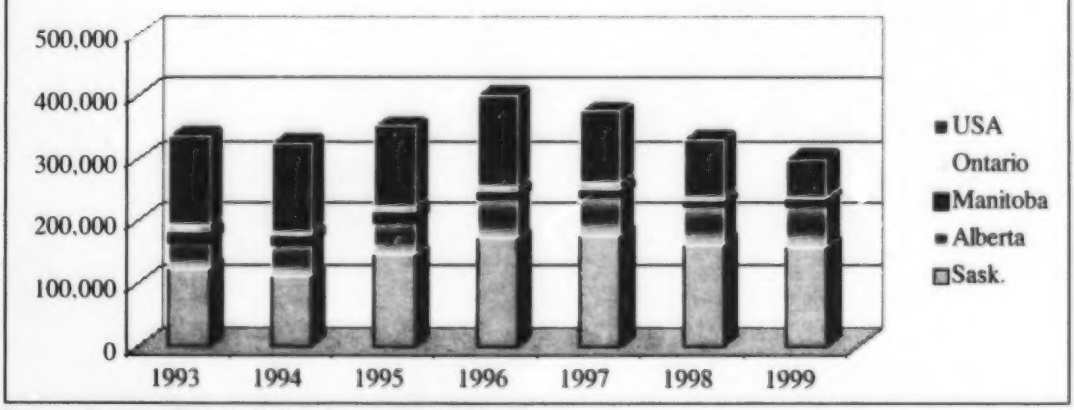
As Figure 1.1 demonstrates, Alberta was the major importer of Saskatchewan feeder calves over the past seven years, and is increasing its imports, while the amount of feeders remaining in the province to be fed has stayed relatively stable. Similarly, Figure 2.1 demonstrates that the major importer of Saskatchewan slaughter cattle has been the United States with Alberta again increasing its share of Saskatchewan slaughter cattle over this time period. Since over 50% of both feeder and slaughter cattle produced in the province are exported there is a major opportunity to feed and slaughter a much greater percentage of the cattle produced within the province.

Figure 1.2 Destination of Sask. Feeder Calves Marketed Avg. 1993-1999



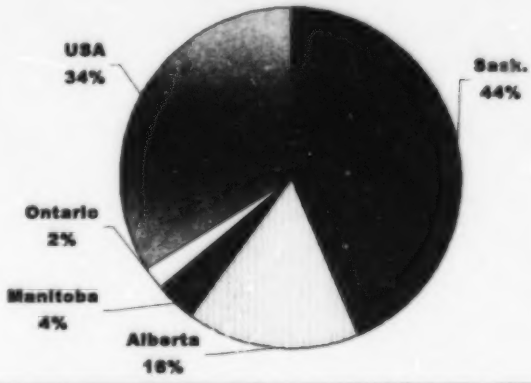
Source: Statistics Branch, Saskatchewan Ag. And Food

Figure 2.1 Destination of Sask Slaughter Cattle Marketed 1993-1999



Source: Statistics Branch, Saskatchewan Ag. And Food

Figure 2.2 Destination of Sask. Slaughter Cattle Avg. 1993-1999



Source: Statistics Branch, Saskatchewan Ag. And Food

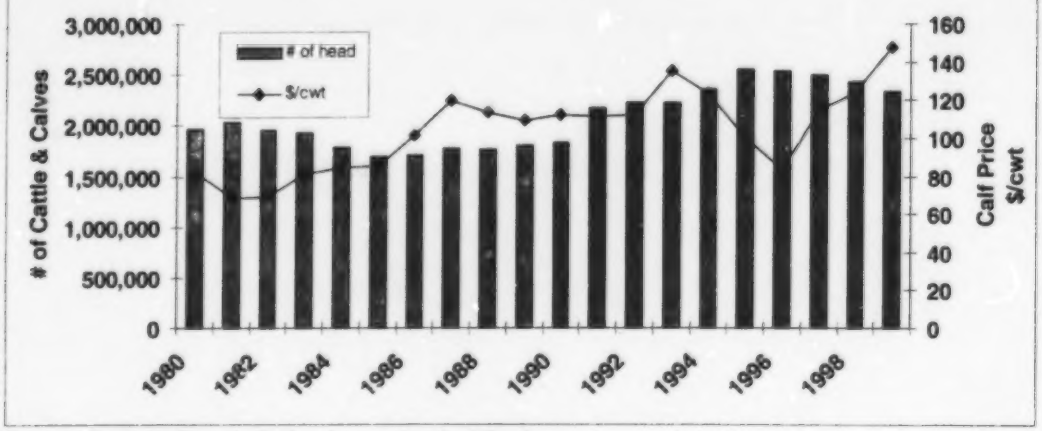
In addition to the availability of cattle to be fed and slaughtered in the province Saskatchewan also provides cost of production advantages over some of the locations our calves are being exported. In a study by Brown et.al. in 1999, an economic comparison of cattle production in Saskatchewan and Alberta showed that Saskatchewan provides a yearly cost saving of $494,000 in feed barley for a 20,000 head feed-lot (Brown, 1999). As a result, feeding and finishing animals locally will allow cow-calf producers to take advantage of Saskatchewan's lower feed costs to gain larger returns.

Disadvantages of Retained Ownership

- One of the main disadvantages with retained ownership is the increased price risk involved with holding title to the calves for an extended period of time. Price roll-backs—which refer to a lower price per pound for a heavier animal—are of particular concern as the value per hundredweight (cwt.) of live beef decreases as the weight of the calves increase. A calf worth $120 per cwt. at a weaned weight of 535 lbs. might only be worth $95 per cwt. at a feeder weight of 850 lbs. and $80 per cwt. at a finished weight of 1225 lbs. As a result, producers must be aware of roll back rates and factor these rates into their projections when considering a retained ownership program. In addition to the presence of roll-backs, simply retaining ownership of the animals for an extended period means that there is an increased probability of encountering a general market downturn and thus lower prices. Generally the calf price cycle in Saskatchewan has followed a 4 to 6 year spread between peaks (see Figure 3.1). When pursuing a retained ownership strategy it is important for producers to recognize at what point of the price cycle they are in so they can anticipate price trends and factor them into their projections.

- Another disadvantage of retained ownership is the strain on cashflow for the cow-calf producer, especially in the first year. Cow calf operations are normally set up to receive cash inflows in the fall when calves are sold. Under retained ownership, revenues from calves may not be received for several months or even up to a year if ownership is retained until calves are sold at a "finished" weight. During the first year of retained ownership this lack of cash inflow along with the extra feed and yardage charges can put a significant strain on cash reserves and operating credit which may make a retained ownership strategy prohibitive for some producers. Therefore, before a retained ownership strategy is pursued producers should ensure they have adequate cash

Figure 3.1: Saskatchewan Calf Price Cycle



Source: Statistics Branch, Saskatchewan Ag. And Food

reserves or operating credit in place to enable themselves to meet their cash obligations until the animals are sold.

- A third problem of retained ownership is the difficulties smaller producers may face in being able to properly feed and market their cattle. Small producers may not have enough similar sized animals to fill an entire pen in a backgrounding or finishing lot. As a result, they may have to find other producers with similar animals to fill the pen or have their animals combined with dissimilar animals which could lead to extra feed costs because of improper rations. Also, packers prefer to purchase animals in larger batches such as semi-trailer loads. If producers do not have sufficient numbers to fill these batch sizes they will again be looking to combine resources with other producers of similar animals or they may not be able to maximize their returns from the calves sold.

- Finally retained ownership results in additional production risks being assumed by the cow-calf producer. Death losses during the backgrounding and finishing stages can have a significant impact on the profitability of retained ownership. Weather conditions also have a factor on profitability. Colder temperatures during backgrounding and finishing stages will reduce feed conversion rates and lead to higher feed costs. As well, the management practices and expertise of the custom feeder must be carefully evaluated to ensure the animals will receive proper care and appropriate rations.

Estimated Benefits of a Retained Ownership Strategy from 1978-1997

The following estimates are not based on actual results achieved by each of the ownership options over the time period examined. Since production methods vary widely across areas of the province and individual operations, accurate historical cost of production data could not be obtained. As a result, cost of production data is based on recent estimates made by the University of Saskatchewan and Saskatchewan Agriculture and Food and then discounted for inflation to more closely reflect costs of production for each year. This methodology is also required to more accurately measure the benefits of retained ownership through transaction cost savings and fluctuations in market prices. If this assumption was not made technological changes over this time period would skew results making any conclusions about the benefits of retained ownership less accurate.

The following evaluates the **estimated** returns for various ownership strategies for Saskatchewan beef producers during the period of 1978 to 1997. Costs of production are based on benchmarks for the 1995 production year for cow/calf and backgrounding operations and 1997 for feedlot enterprises taking into account both the fixed and variable costs involved in the production process. Costs are adjusted for inflation to estimate production costs in each year. Cow/calf operations (CC) are assumed to produce calves for sale in the fall at an average weaning weight of 550 lbs. Backgrounding operations (B) are assumed to purchase weaned calves at 550 lbs. and place calves on feed for 135 days with a rate of gain of 2.0lbs/day yielding a sale weight of 820 lbs. Long keep feedlots (L-K/F) are assumed to purchase weaned calves at 550 lbs. and feed them for 250 days to a finished weight of 1225 lbs. Short keep feedlots (S-K/F) are assumed to purchase calves at a backgrounded weight of 820 lbs. and place them on feed for 125 days gaining 3.25/lbs/day to be sold at a finished weight of 1225 lbs. Costs of production for retained ownership strategies such as cow/calf - backgrounding (CC-B) or cow/calf-backgrounding-finishing (CC-B-F) assume a 10% markup on top of the backgrounding and finishing production costs to reflect a custom rate charged to the cow-calf producer. Also under the retained ownership strategies (CC-B & CC-B-F) transaction cost savings (see advantages section for a description of transaction costs) are deducted from production costs. For CC-B and CC-B-F transaction cost savings are estimated at $25.25/hd and $31.25/hd respectively.

Data used to generate[1] the revenue per head for each of the three primary enterprises was taken from the Canada Livestock and Meat Trade Report and Canfax Research Services. For weaned calves, prices for 500 to 600 lb. steers and heifers are used. For backgrounded feeders, prices for 800 to 900 lb. steers and heifers are used. For finishers, prices for A1, A2 slaughter steers and heifers are used.

It is assumed that the average sale date for weaned calves was October first for each year. For backgrounded animals being sold by the backgrounding (B) or cow-calf/backgrounding (CC-B) enterprises, the average of the January and February prices were used for both steers and heifers. A similar method is used for the finishing operations (S-K/F, L-K/F, & CC-B-F), but since animals could be sold at three different times during the year, the averages of January/February, May/June, and September/October were used.

[1] Prices used to calculate revenue for each enterprise were not the actual prices obtained in each year, but were stochastically generated. As a result, actual results obtained by producers in each year may differ from those of the simulation.

Table 2.1 gives the year-by-year summary of the simulated returns from each ownership strategy. As Figure 4.1 and Table 2.1 illustrate, there was only one year of the twenty simulated during which some form of retained ownership would not have benefited the cow-calf producer. Further, cow-calf/backgrounding/finishing shows the best return to the cow-calf producer in every year except five. In four of those five years, retaining ownership through only the backgrounding stage would have been the optimal strategy. Considering all ownership options in the industry, only short keep feedlot (S-K/F) and cow-calf/backgrounding/finishing (CC-B-F) yielded a positive average return over the twenty year planning period.

In addition to the returns generated by each ownership option, the variability of returns for each option is another important factor to note. The variability (standard deviation) of returns yields an estimation of the risk involved with each alternative. The greater the variability the greater the risk returns will differ significantly from the average. Consequently the most risky ownership options are the cow/calf-backgrounding (CC-B) and cow/calf-backgrounding-finishing (CC-B-F) options. The short keep feedlot (S-K/F) and long keep feedlot L-K/F being the least risky.

Figure 4.1 Generated* Returns for Cow/Calf Ownership Strategies

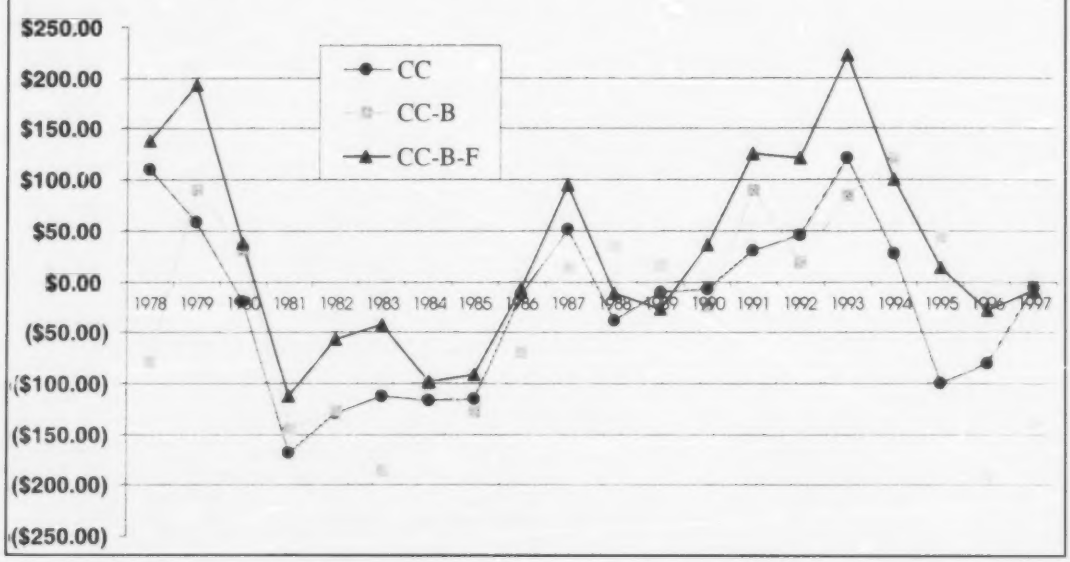


TABLE 2.1: GENERATED* RETURNS PER HEAD TO OWNERSHIP OPTIONS, 1978-1997

Year	CC	CC-B	CC-B-F	B	L-K/F	S-K/F
1997	($6.63)	($137.73)	($8.83)	($159.06)	($128.09)	$47.06
1996	($80.55)	($190.81)	($28.02)	($143.65)	($61.83)	$86.03
1995	($100.63)	$44.76	$13.43	$125.52	$1.26	$6.17
1994	$26.80	$121.23	$99.97	$54.29	($72.25)	($32.55)
1993	$121.48	$84.15	$221.66	($84.92)	($58.34)	$44.29
1992	$45.51	$19.38	$121.30	($65.92)	($61.93)	$24.20
1991	$30.64	$89.64	$124.73	$13.15	($55.14)	($12.89)
1990	($8.01)	($25.13)	$36.40	($70.12)	($119.11)	$5.94
1989	($10.72)	$15.73	($27.14)	($19.79)	($167.69)	($56.71)
1988	($38.73)	$34.91	($11.45)	$38.89	($109.74)	($57.31)
1987	$50.55	$13.52	$94.26	($89.73)	($115.67)	($2.14)
1986	($12.72)	($69.32)	($7.63)	($95.55)	($126.56)	$10.55
1985	($115.39)	($128.18)	($91.34)	($33.55)	($77.86)	$18.17
1984	($117.21)	($100.18)	($99.13)	($50.36)	($85.65)	$23.90
1983	($113.24)	($185.50)	($42.83)	($16.48)	($35.85)	$39.09
1982	($129.53)	($126.66)	($56.04)	($89.72)	($38.03)	$64.63
1981	($169.41)	($144.39)	($112.52)	$18.95	($42.18)	$19.56
1980	($20.17)	$31.62	$37.44	$13.80	($61.91)	$36.71
1979	$58.18	$89.68	$192.20	($19.28)	($7.05)	$52.84
1978	$110.58	($79.72)	$138.36	($244.71)	($98.25)	$66.04
20 yr. Avg.	**($23.96)**	**($32.15)**	**$29.74**	**($45.91)**	**($76.09)**	**$19.18**
Std. Dev. (Variability)	**$82.54**	**$99.25**	**$96.57**	**$83.03**	**$42.99**	**$38.53**

* The prices used for each year in the simulation were not the actual prices obtained, but were stochastically generated through the computer simulation program @RISK to show the effect variability in prices will have on the profitability of each of the ownership options. While the actual profitability of an ownership option may have differed from the generated return in a given year, the simulated prices incorporate the effect the calf price cycle would have on each ownership strategy over the 20-year planning period. Use of this methodology provides the best estimation of the long-term profitability for each ownership option in the absence of accurate historical cost data.

Table 2.2 Frequency of Ownership Strategy to Generate Positive Returns 1978-97

CC	CC-B	CC-B-F	B	L-K/F	S-K/F
35%	50%	50%	30%	5%	75%

Table 2.3 Frequency of Ownership Strategy to Provide Highest Possible Return

CC	CC-B	CC-B-F	B	L-K/F	S-K/F
0%	10%	35%	10%	0%	45%

Table 2.4 Frequency of Ownership Strategy to Provide Lowest Possible Return

CC	CC-B	CC-B-F	B	L-K/F	S-K/F
20%	15%	0%	25%	40%	0%

Tables 2.2, 2.3, and 2.4 show the positive effect retained ownership can have on the returns earned by the cow-calf producer. By being involved in an additional phase of the production process, cow-calf producers can increase their probability of generating positive returns from 35% to 50%. As well, by retaining ownership until the finishing stage they increase their probability of earning the highest possible return (among the ownership options considered) from 0% to 35% while decreasing their odds of earning the lowest possible return from 20% to 0%.

Conclusion

Based on the results of this simulation it appears that retaining ownership for cow-calf producers could be a good strategy to increase returns. While the overall risk (income variability) associated with retained ownership may increase relative to cow-calf production alone, the increase in expected returns (-$23.96/hd to $29.74/hd by retaining ownership through the finishing stage, for example) makes this additional risk worthwhile. However, the results also show that simply retaining ownership to the background stage may not be sufficient in most years to increase profits as the average expected return is lower and risk higher for this option than staying in cow-calf production alone. Therefore, producers wanting to retain ownership will probably have to "go all the way" in most years, by retaining ownership right through the finishing stage. It may be the case that in certain years selling weaned or backgrounded animals will be the most profitable alternative. Because of the flexibility retained ownership offers this can be done, as calves can be sold at any time profitable returns can be obtained, whether it is at the weaning, backgrounding, or finished stages. This flexibility is one of the main advantages of retained ownership.

The use of contractual relationships to feed and finish calves allows producers the option to participate in more than one stage of production to generate higher returns without having to make significant investments in equipment or facilities. As well, cow-calf producers can take advantage of the production expertise and economies of scale custom feedlot operators provide plus the ability to generate savings in transaction and carrying costs as animals move from one stage of production to the next at their production cost rather than "market value". Given these advantages along with the opportunity to aid in the development of the local feeding and packing industries, retained ownership can be an attractive option for many cow-calf producers. The use of a retained ownership strategy also allows cow-calf producers the ability gain some control in the industry and address financial risk in an attempt to stabilize and increase returns.

Custom Feeding Break-Even Budget

Custom Backgrounding Costs:

Assumptions
- Fed from 550lbs to 820 lbs = total gain of 270 lbs
- Days on feed 135
- Rate of gain 2 lbs/day
- Average Dry Matter Intake (DMI) 17 lbs/day
- Feed cost $0.055/lbs (see below for feed costs used in ration)
- Yardage Costs $0.25/day
- For break-even analysis weaned calf value based on 550 lbs. @ $1.35/lbs

Backgrounding Budget:

Total feed cost = DMI lbs/day x Feed cost/lbs. x Number of days on feed
= 17 lbs/day x $0.055/lbs x 135 days
= $126.23

Total yardage cost = Days on feed x yardage cost/day
= 135 days x $0.25/day
= $33.75

Total Backgrounding Cost = Total feed cost + Total yardage cost
= $126.23 + $33.75
= $159.98

Custom Finishing Costs:

Assumptions
- Fed from 820 lbs to 1225 lbs for total gain of 405 lbs
- Days on feed 125
- Rate of gain 3.25 lbs/day
- Average Dry Matter Intake (DMI) 25 lbs/day
- Feed cost $0.055/lbs (see below)
- Yardage costs $0.25/day
- For break-even analysis weaned calf value based on 550 lbs. @ $1.35/lbs

Finishing Budget:

Total feed cost = DMI lbs/day x Feed cost/lbs x Number of Days
= 25 lbs/day x $0.055/lbs x 125 days
= $171.88

Total yardage cost = Days on feed x yardage cost/day
= 125 days x $0.25/day
= $33.25

Total Finishing Cost = Total feed cost + Total yardage cost
= $171.88 + $31.25
= **$203.13**

Total Retained Ownership Cost = Total backgrounding cost + Total finishing cost + Interest costs*

= $159.98 + $203.13 + $64.12
= **$427.23**

Break-even Price required = (weaning wt. x $/lbs) + Total Retained Ownership Cost
1225 lbs

= (550 lbs x $1.35/lbs) + $427.23
1225 lbs

= $ 0.95/lbs

Prices used to calculate feed ration costs:

Barley	$115/t
Hay	$65/t
Silage	$35/t
Canola meal	$220/t
Limestone	$280/t
T.M. Salt	$495/t

***Interest costs (assumes a 9% annual interest rate)**

Interest on operating loan for backgrounding costs:
$159.98 x ((9%/365 days) x 260 days) = $10.26

Interest on operating loan for finishing costs:
$203.13 x (9%/365 days) x 125 days) = $6.26

Investment cost of retaining ownership of feeders:
(550 lbs x $1.35/lbs) x ((9%/365 days) x 260 days) = $47.60

Total interest costs:
$10.26 + $6.26 + 47.60 = $64.12

Sample Custom Feeding Agreement

Date: January 2001

BETWEEN

Custom Feeders
Box 123
Anywhere, Saskatchewan
S0S 0S0

AND

Cow/calf Owner
Box 456
Somewhere, Saskatchewan
S1S 1S1

IT IS AGREED:

- That the FEEDER will supply all feed, water and nourishment for "X " number of steers/heifers under this agreement at the rate of $0.55/lbs of gain. Every reasonable effort will be made to ensure the health and survival of these animals.

- Any death loss greater than 3% is entirely at the risk of the FEEDER.

- All cattle must be branded with the OWNER'S brand.

- The OWNER agrees to pay the cost of processing and a chute charge of $2.00/head for processing. Processing includes the following:

- IBR	- Hemopholis	- BRSV
- P13	- Implant	- Blackleg
- BVD	- Ivomec	- Ear Tag

- The FEEDER will be responsible for incurred costs related to Pen Checking, Drugs, and Veterinary costs.

- The FEEDER will receive, on a monthly basis, an advance of $0.80/head/day. Any adjustments necessary will be made on the last feed bill.

- The feeding period will be for a minimum of 150 days.

- Weight gain is to be calculated on cattle weighed at _____ with a 4% shrink minus incoming weight (i.e. invoiced weight).

_____ _____

Feeder

Information Sources

Cattle marketing Report
Statistics Branch
Saskatchewan Agriculture & Food
3085 Albert St.
Regina, SK S4S 0B1
Ph. (306) 787-5120

Brown, W.J., Lokken, J.S., Anderson, B., & Carlberg, J. An Economic Comparison of Cattle Production in Saskatchewan and Alberta. Saskatoon: University of Saskatchewan, 1999

Beef Development Fund- Final Report. An Economic Analysis of Retained Ownership Strategies. Prepared by: University of Saskatchewan, 1999.

Additional Information Sources

Backgrounding Beef Cattle in Saskatchewan. SAF publication, 1995. Available through Saskatchewan Agriculture and Food Rural Service Centers.

Cow-Calf Enterprise: Financial Targets for Farm Managers. SAF publication, 1995. Available through Saskatchewan Agriculture and Food Rural Service Centers.

Available through Saskatchewan Agriculture and Food Rural Service Centers or Saskatchewan Agriculture and Food website at **www.agr.gov.sk.ca**